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ABSTRACT OF THE DISCLOSURE

Method and apparatus for automatically dynamically adjusting prestressed bearings of shaft are provided. The apparatus comprises a sleeve assembly having outer and inner sleeves sandwiched between the bearings. An inner diameter of outer sleeve is smaller than an outer diameter of inner sleeve. Hence, outer and inner sleeves are fitted together after cooling. Further, inner sleeve is compressed by the outer sleeve to extend axially. During rotation of shaft, the axial extension of inner sleeve is reduced because the radial expansion of outer sleeve is larger than that of inner sleeve due to an thermal expansion coefficient of outer sleeve larger than that of inner sleeve. This can reduce prestress of bearings without degrading a rigidity thereof.